

Logistics & Distribution Standards & Procedures		
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New Issue Date 2/16/2011		
Next Review Date		
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Determination of VOC and HAP in Asphalt

Reference	<ul style="list-style-type: none"> • Office of Solid Waste and Emergency Response Directive (OSWER) 9360.4-07 • EPA Test Method 8260B Volatile Organic Compounds by Gas Chromatograph/Mass Spectrometry • Clean Air Act of 1990 section 112(b) • ASTM D5842-00 • ASTM 4056-07 • EPA certified letter, 1/13/2011
Scope	<p>1.1 This procedure applies to terminals and products outlined in EPA's certified letter as part of the investigation of IOTI. In addition, this procedure will identify applicable sampling and testing methodologies, best laboratory practices, reporting and data and document control of laboratory results to IOTI. The procedure herein this document shall only apply for the time period specified in the certified EPA letter</p>
Purpose	<p>2.1 Pursuant to Section 114 of the Clean Air Act, 42 U.S.C. 7401 et seq, the Environmental Protection Agency (EPA) has issued a reporting requirement and request for information as part of an investigation to determine whether IOTO has violated aforementioned section of the Clean Air Act. As such, in accordance with the testing order issue by EPA under section 12 of the certified letter sent on 12/2/2011 Irving Oil have enlisted the guidance of Inspectorate America Corporation (IAC) to serve as the Independent testing laboratory. The intent of this document is to identify the intended independent Testing Laboratory for the required testing period and to provide a general protocol for sampling and testing by which data and reporting will be facilitated.</p>
Responsibility	<p>3.1 Inspectorate America Corporate (IAC), Compliance Specialist is responsible for ensuring this procedure is followed, and has been given authority to carry out all necessary tasks and maintain applicable records. IOTI will be responsible for reporting all data as required by EPA within the specified time outlined in certified EPA letter.</p>
Sampling	<p>4.1 In accordance with the sampling criteria outlined in the office of Solid Waste Emergency Response Directive 9360.4-07 the following sampling action will be performed and documented, If for any reason a sample is not collected in accordance with the procedures outlined in this protocol, then it will be documented and the report to EPA will include justification for the deviation and an explanation of the sampling methods that were used.</p> <p>4.1.2 Date, time, location of sample (i.e. tank number and facility) and product type (i.e. asphalt) shall be documented on sample tag and IAC's chain of custody form.</p> <p>4.1.3 Temperature of sample at time of collection shall be documented in</p>

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IAC's logbooks.

- 4.1.4 Gauge height and applicable tank strapping for each tank sampled shall be documented in IAC's logbook and performed before sampling event.
- 4.1.5 Samples shall be collected using any combination of sampling apparatus outlined in ASTM D4056-07 Standard Practice for Manual Sampling of Petroleum and Petroleum Products and OSWER 9360.4-07 and/or considered industry best practice.
- 4.1.6 All samples shall be drawn from the top hatch, whenever possible: any deviation from procedure will require permission from IAC Compliance Specialist and IOTI Responsible Corporate Office, in advance and will be documented and reported EPA as stated above
 - (i) In the case of asphalt, sampling from the top is not possible due to the elevated temperature of sample which may pose an immediate health and safety risk. In addition, sampling from the top hatch may result in a loss of volatile content. As such, a deviation from OSWER Directive 9360.4.7 and standard industry practices is necessary to ensure health and safety needs as well as sample integrity are maintained. Therefore, a spigot sample shall be obtained for all asphalt tanks sampled to minimize assumed health and safety risks and preserve both VOC and HAP content.
 - (ii) In the case of asphalt, approximately 10 grams of the spigot sample shall be placed in two separate pre-weighed vials, capped and allowed to cool before adding methanol.
- 4.1.7 An Irving Oil representative (i.e. Terminal Manager) at the terminal location shall provide a consignee for all work performed.
- 4.1.8 Samples shall be expedited to the nearest IAC to be shipped to the applicable laboratory immediately following sampling event for testing. A copy of the chain of custody paperwork will be included in shipment to the retained by the laboratory

Testing

- 5.1 In accordance with the testing methodologies outlined in EPA's guidance document (SW-846) Test Methods for Evaluating Solid Waste, Physical/Chemical Methods and EPA methods 8260B and 5035 the following shall be performed to determine VOC and HAP in samples collected as described above.
 - 5.1.2 Hazardous Air Pollutants (HAP) and VOC shall be determined by the

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general methodology outlined in EPA method 8260b, to include dilution with methanol utilizing the purge and trap method to be analyzed on a Gas Chromatograph equipped with a Mass Spectrometer.

- 5.1.3 Reagent Purity and Grade as outlined in EPA method 8260b shall be used and documented in accordance with Good Laboratory Practices (GLP)
- 5.1.4 Whenever possible, standards will be traceable to NIST or prepared as outlined EPA method 8260b
- 5.1.5 Instrument settings and calibrations shall be performed within noted parameters as outlined in EPA method 8260b in accordance with best laboratory practices.
- 5.1.6 Following calibration, calibration check standards with stated precision shall be analyzed and documented in accordance with EPA method 8260b.
- 5.1.7 Sample analysis shall be performed in accordance with EPA method 8260b.
- 5.1.8 Quality Control/Assurance and demonstration of proficiency shall be established through any combination of Statistical Quality Control Charting (SQC), Inter-laboratory Cross Check Programs (ILCP) Certified Reference Material (CRM's) and the quality procedures outlined EPA method 8260b.
- 5.1.9 Data processing of peaks, etc shall be standardized and controlled through integration software and captured in the Laboratory Information System (LIMS).
- 5.1.10 Data shall be reviewed by qualified laboratory personnel and signed by the laboratory Manager or designee prior to release results to Irving Oil

Document and Data Control

- 6.1 All documents and data generated shall be maintained in accordance with IAC's Quality Policy and retained for minimum of five years

Sample Retention

- 7.1 All samples shall be retained for a minimum of 120 days. All samples shall be completely traceable as facilitated by LIMS Sapphire.

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